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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,635	07/17/2003	Toshiyuki Takabayashi	KON-1805	1857
7590 11/10/2004 MUSERLIAN, LUCAS AND MERCANTI 600 Third Avenue New York, NY 10016			EXAMINER, SHAH, MANISH S	
			ART UNIT 2853	PAPER NUMBER

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/621,635

Applicant(s)

TAKABAYASHI, TOSHIYUKI

Examiner

Manish S. Shah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 8-13 are objected to because of the following informalities: (1) Claim 8-12 are dependent of claim 4, claim 8-12 are claiming "a method for forming image of claim 4..." However, claim 4 is claiming "method of preserving an ink..." (2) Claim 13 is depends on claim 9, but claim 9 are not claiming anything about recording medium.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 5 & 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Maxwell (# EP 0071345).

Maxwell discloses a method of preserving an ink including keeping the ink into tight container, wherein ink contains a cationic polymerizable monomer (page: 13, line: 15 to page: 21, line: 25) and an initiator (page: 22, line: 1-25), with the water content of not more than 5% by weight (see Example: 4) and the ink is curable by irradiation with an active energy (see Abstract; page: 1, line: 1-15). They also disclose that cationic

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polymerizable monomer is a compound including an oxirane group in molecule (page: 13, line: 18-20). They also disclose the method for forming an image including the steps of jetting a droplet of an inkjet ink onto recording medium; and irradiating the recording medium jetted the inkjet ink with an active energy ray (page: 1, line: 1-15; page: 29, line: 12-25), wherein the irradiating steps is carried out in less than 5 second after the jetted droplet of the inkjet ink reaches on the recording material (page: 43, line: 15-17). They also disclose that the recording material is glass, metal or polymeric substrate (page: 43, line: 24-25).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 4, 6, 11 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell (# EP 0071345) in view of Takami et al. (# US 5721020).

Maxwell discloses a method of preserving an ink including keeping the ink into tight container, wherein ink contains a cationic polymerizable monomer (page: 13, line: 15 to page: 21, line: 25) and an initiator (page: 22, line: 1-25), with the water content of not more than 5% by weight (see Example: 4) and the ink is curable by irradiation with an active energy (see Abstract; page: 1, line: 1-15). They also disclose that cationic

polymerizable monomer is a compound including an oxirane group in molecule (page: 13, line: 18-20). They also disclose the method for forming an image including the steps of jetting a droplet of an inkjet ink onto recording medium; an irradiating the recording medium jetted the inkjet ink with an active energy ray; and heated after the irradiating steps (page: 1, line: 1-15; page: 29, line: 12-25), wherein the irradiating steps is carried out in less than 5 second after the jetted droplet of the inkjet ink reaches on the recording material (page: 43, line: 15-17). They also disclose that the recording material is glass, metal or polymeric substrate (page: 43, line: 24-25).

Maxwell differs from the claim of the present invention is that the cationic polymerizable monomer is an oxetane compound.

Takami et al. teaches that to get the printed image with superior in processability, adhesivity, hardness and mar resistance the curable coating composition (ink composition) includes an oxetane compound (see Abstract; column: 1, line: 55-57; column: 4, line: 50-65; Table: 1,5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the curable ink of Maxwell by the aforementioned teaching of Takami et al. in order to get an image with superior in processability, adhesivity, hardness and mar resistance, which increases the storage stability of the printed image.

4. Claims 8 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell (# EP 0071345) in view of Takami et al. (# US 5721020) as applied to claims 2, 4, 6, 11 & 12 above, and further in view of Edlein et al. (# US 6528127).

Maxwell and Takami et al. teaches all the limitation of the image forming method except that (1) the total thickness of the jetted photo curable ink on the recording material after the irradiating is 2 to 20  $\mu\text{m}$ . (2) The recording material has a surface energy of  $3.5$  to  $6.0 \times 10^{-2} \text{ Nm}^{-1}$  ( $0.035$  to  $0.06 \text{ J/m}^2$ ).

Edlein et al. teaches that the to get the scratch resistance printed image, image forming method includes the ink (column: 9, line: 44-60), and the total thickness of the jetted photo curable ink on the recording material after irradiating is  $0.5$  to  $12 \mu\text{m}$  (column: 11, line: 40-50), and the recording medium has the surface energy is at least about  $0.04 \text{ J/m}^2$  ( $4.0 \times 10^{-2} \text{ Nm}^{-1}$ ) (column: 8, line: 61-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink and recording medium used in the image forming method of Maxwell as modified by the aforementioned teaching of Edlein et al. in order to have scratch resistance and chemical resistance printed image, which increases the storage stability of the printed image.

5. Claims 9 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell (# EP 0071345) in view of Takami et al. (# US 5721020) as applied to claims 2, 4, 6, 11 & 12 above, and further in view of Fujii (# US 6471318).

Maxwell and Takami et al. teaches all the limitation of the image forming method except that (1) the ink jetted from the nozzle of the ink jet head having a volume of 2 to 15 pl. (2) The jetting step is conducted by controlling the ink jet head and the ink to be between  $35$  to  $100 \text{ }^{\circ}\text{C}$ .

Fujii teaches that to get the stable and constant discharge of ink the ink jet recording head jetting the ink having the volume of 15 pl and the temperature of the ink jet head is 10 to 60 °C (figure: 11; column: 8, line: 1-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the image forming method of Maxwell as modified by the aforementioned teaching of Fujii in order to get the stable and constant discharging of the ink, which gives uniform and high quality printed image.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) Batting et al. (# WO 0148102) discloses an image forming method using ink composition, wherein the ink composition including a cationic polymerizable monomer and an initiator (page: 5, line: 10-29), with the water content of not more than 5% by weight (page: 7, line: 17-19) and the ink is curable by irradiation with an active energy (see Abstract).

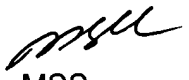
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 7:00am-3:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manish S. Shah  
Examiner  
Art Unit 2853

  
MSS  
10/13/04